



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,298	12/18/2001	Matthew B. Donatucci	ATMI-S14	1697
25559	7590	06/24/2004	EXAMINER	
ATMI, INC. 7 COMMERCE DRIVE DANBURY, CT 06810			BUEKER, RICHARD R	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 06/24/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,298

Applicant(s)

DONATUCCI ET AL.

Examiner

Richard Bueker

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 15-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1763

Claims 1-4, 7-8, 10, 14, 25 and 26 stand rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jurgensen (WO 01/61071). Published U.S. application 2003/0054099 is a patent family equivalent of WO 01/61071, and is used as an English translation in the discussion below.

Jurgensen discloses (see Figs. 1 and 5) a vaporizer in the form of a block that has elongated wells formed therein. Space is provided in the block for accumulation of vapor, both in the individual wells and in the passageway 6. Jurgensen teaches (paragraphs 33 and 57) that the block is temperature controlled by, for example, resistive heating, and therefore, the block is inherently or at least obviously thermally conductive as recited in claim 1. Also, the wells in the block are pressure controlled, and therefore the block is inherently or at least obviously sealed as recited in claim 1.

Claims 6, 12 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Jurgensen (WO 01/61071). While Jurgensen describes three wells in his exemplary embodiment, the use of a different number of wells, such as the 4 wells recited in claim 6, would have been merely additive and prima facie obvious to one skilled in the art. Also, the specific dimensions recited in claims 12 and 13 are considered to be routine optimization, and would have been prima facie obvious to one skilled in the art in the absence of a showing of unexpected results.

Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Jurgensen (WO 01/61071) taken in view of Tanabe (2001/0008121), who teaches (see paragraph 52) that a thermocouple can be used to measure the temperature of a vaporizer for feedback control of the vaporizer temperature. It would have been obvious

to one skilled in the art to use a thermocouple in the temperature controller of Jurgensen, in view of Tanabe's teaching that a vaporizer temperature can be successfully controlled using a thermocouple.

Claim 11 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Jurgensen taken in view of Holloway (3,647,197), who teaches (col. 4, lines 4-15) that it was known in the prior art to use aluminum as the material of construction for a thermally conductive vaporizer, and it would have been prima facie obvious to one skilled in the art to use this material for Jurgensen's thermally conductive vaporizer, because Holloway teaches that aluminum can successfully be used to construct a vaporizer that requires thermal conductivity.

Claims 1-4, 6, 7, 10 14, 25 and 26 stands rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reed (3,740,043). Reed (see Figs. 1 and 2) discloses a vaporizer having a crucible 29 in the form of a block, wherein the block crucible contains within it a further block having elongated wells, and thus the wells are contained within the block crucible and can properly be considered to be "formed therein" as recited in claim 1. Also, Reed specifically teaches (col. 4, lines 65-68) that the block 30 containing the wells can be integral with the crucible block 29. The block crucible includes a vapor accumulation space (col. 6, lines 19-22) communicatively connected to the elongated wells. Also, an outlet for discharge of vapor is provided. The block crucible of Reed is inherently or at least obviously sealed, and therefore includes sealing means as required by claim 1.

Claim 8 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Reed in view of Barr (2,447,789), Spriggs (3,405,251) or Jurgensen (WO 01/61071), each of whom teaches that a resistive heating element can successfully be used to heat a vaporizer, and for that reason it would have been obvious to one skilled in the art to heat the vaporizer of Reed by attaching resistive heating elements to its walls.

Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Reed in view of Tanabe (2001/0008121), who teaches (see paragraph 52) that a thermocouple can be used to measure the temperature of a vaporizer for feedback control of the vaporizer temperature. It would have been obvious to one skilled in the art to use a thermocouple in the temperature controller of Reed, in view of Tanabe's teaching that a vaporizer temperature can be successfully controlled using a thermocouple.

Claim 11 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Reed (3,740,043) taken in view of Holloway (3,647,197), who teaches (col. 4, lines 4-15) that it was known in the prior art to use aluminum as the material of construction for a thermally conductive vaporizer, and it would have been prima facie obvious to one skilled in the art to use this material for Reed's thermally conductive vaporizer, because Holloway teaches that aluminum can successfully be used to construct a vaporizer that requires thermal conductivity. It is noted also that Reed provides guidance for the selection of materials of construction of his apparatus at col. 3, lines 44-48, wherein he teaches that the materials of construction should be chosen such that they are not chemically corroded by the particular evaporant material to be evaporated. Thus, it

Art Unit: 1763

would have been obvious to use an aluminum crucible block with any evaporant that is compatible with aluminum.

Claims 12 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Reed. The specific dimensions recited in claims 12 and 13 are considered to be routine optimization, and would have been prima facie obvious to one skilled in the art in the absence of a showing of unexpected results.

Claims 1-8, 10, 12-14, 25 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Horsky (6,107,634) taken in view of Barr (2,447,789), Reed (3,740,043) and/or Spriggs (3,405,251). Horsky (see Fig. 2, container 64) discloses a vaporizer for decaborane in which solid decaborane as an evaporant is placed in the bottom of a thermally conductive sealed container having an outlet for discharge of vapor, and means for heating the container are provided for vaporizing the decaborane. The evaporant is placed in the bottom of the container and the space above the evaporant is an accumulation space for accumulating vapor of the evaporant. Horsky does not disclose the use of a block having wells formed therein for holding the evaporant. Barr (Fig. 1), Reed (Figs. 1 and 2) and Spriggs (Figs. 1-4), however, all teach that an evaporant can be more uniformly heated and more uniformly evaporated by providing a block with wells for holding the evaporant, compared to a conventional vaporizer in which the evaporant is merely placed in the bottom of a vaporizer. It would have been obvious to one skilled in the art to provide a block with wells in the sealed chamber of Horsky in the location of Horsky's evaporant to hold the evaporant to be vaporized because Barr, Reed and Spriggs clearly teach that a block with wells for

holding evaporant will more uniformly heat an evaporant material and more uniformly evaporate the evaporant material. It is noted that while Horsky uses a temperature-controlled fluid to heat his vaporizer, it would have been obvious to substitute a resistance heater as recited in applicants' claim 7 and 8 as the heating means of Horsky, because both types of heating means are old and well known in the art of heating vaporizers.

Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Horsky (6,107,634) taken in view of Barr (2,447,789), Reed (3,740,043) and/or Spriggs (3,405,251) as stated above, taken in further view of Tanabe (2001/0008121), who teaches (see paragraph 52) that a thermocouple can be used to measure the temperature of a vaporizer for feedback control of the vaporizer temperature. It would have been obvious to one skilled in the art to use a thermocouple to control the temperature of Horsky's vaporizer, in view of Tanabe's teaching that a vaporizer temperature can be successfully controlled using a thermocouple.

Claim 11 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Horsky (6,107,634) taken in view of Barr (2,447,789), Reed (3,740,043) and/or Spriggs (3,405,251) as stated above, taken in further view of Holloway (3,647,197), who teaches (col. 4, lines 4-15) that it was known in the prior art to use aluminum as the material of construction for a thermally conductive vaporizer, and it would have been prima facie obvious to one skilled in the art to use this material for Horsky's thermally conductive vaporizer, because Holloway teaches that aluminum can successfully be used to construct a vaporizer that requires thermal conductivity.

The Donatucci Declaration is insufficient to swear behind the Jurgensen reference because the attached exhibit A fails to provide convincing evidence of possession of the claimed invention prior to the effective date of the Jurgensen reference. Exhibit A provided by applicant is an "Invention Disclosure" form that describes the claimed invention, but it is not signed or dated, and there is no indication that the form was filled out prior to the effective date of the Jurgensen reference. The Declaration refers to blacked out dates on the Invention Disclosure form, which includes two blacked out portions. It is noted, however, that more than just dates have been blackened out but instead the entire portions have been blacked out, making it unclear what these portions mean. These deleted portions do not provide proof that applicants had possession of the claimed invention prior to the effective date of the Jurgensen reference. One blacked out portion appears to relate to a laboratory notebook or "runsheets", but this does not provide proof that the presently claimed invention was described in a laboratory notebook or "runsheets" prior to the Jurgensen reference effective date. The other blacked out portion appears to relate to publication, public disclosure or offer for sale, but this does not provide proof that applicants had possession of the claimed invention prior to the effective date of the Jurgensen reference.

Applicants have argued that the newly added limitation of "wherein each elongated well comprises a single opening that is in fluid communication with the interior space" is not taught by Reed, because the wells in Reed's block have openings at the upper and lower ends. It is noted, however, that the "comprising" language of this new

Art Unit: 1763

limitation means that the claims do not exclude the presence of another opening in addition to the recited "single" opening. Each of Reed's wells includes an upper opening that can properly be described as a single opening, and the "comprising" language used in applicants' claims do not exclude the presence of another opening at the bottom of a well as in Reed's design.

Regarding the fingers 36 of Reed, applicants' claims do not exclude the presence of such fingers.

Regarding the rejection of claim 8 over Reed in view of Barr, Spriggs or Jurgensen, Reed discloses a crucible 29 in the form of a block (see Fig. 1), which is heated by placing the block in a furnace that is heated by, for example, electrical resistance heating (col. 3, lines 25-38). Barr (see elements 25 and 26 of Fig. 1 and col. 2, lines 42-54), Spriggs (Figs. 1 and 2) and Jurgensen (para. 33) all disclose crucible blocks having wells, wherein resistance heaters are embedded in the walls of the crucible (Spriggs) or placed around the crucible. The secondary references teach that a crucible block can be successfully heated by attaching the resistance heaters to the walls of the block. Therefore, it would have been prima facie obvious to one skilled in the art that a crucible block such as Reed's could be successfully heated by attaching resistance heaters to the walls of the block. It is noted also that the dictionary definition of "attach" is "to bring into association" or "associate", and the cited references all make clear that a crucible can successfully be heated by associating the walls of the crucible with a resistive heating element as recited in claim 8.

Applicants' arguments regarding the rejections based on Horsky in view of Barr, Spriggs or Reed have been considered but are not persuasive. For example, applicants have argued that a combination of Horsky and Spriggs would undesirably employ two separate heating systems. It is noted, however, that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Horsky makes clear that uniform heating of a decaborane vaporizer is desirable (see col. 5, lines 62-665 of Horsky). Each of Barr and Spriggs teaches that the use of a multiplicity of wells in a thermally conductive block of a vaporizer will provide for uniform heating of an entire charge of evaporant material. See col. 4, lines 20-23 of Barr, and col. 1, lines 14-20 of Spriggs. Also, Reed and Spriggs teach that the use of wells makes a vaporizer more efficient. See col. 5, lines 48-53 of Reed and col. 1, lines 9-13 of Spriggs. These teachings concerning the advantages of using a multiplicity of wells would have suggested to one skilled in the art that the use of wells in a vaporizer would increase the efficiency and uniformity of heating of a vaporizer, including a vaporizer that vaporizes decaborane such as Horsky's vaporizer.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (703) 308-1895. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Richard Bueker

Richard Bueker
Primary Examiner
Art Unit 1763